

Duh!

Finding the Obvious in a Patent Application

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Patents may be granted in the U.S. for inventions that are *new* and *useful*. The term “new” means that the claimed invention was not known publicly prior to being invented by the patent applicant. The term “useful” means that the invention actually works to produce the intended result. However, being new and useful, while necessary conditions for patentability, are not sufficient. 35 U.S.C. 103(a) requires that not only must an invention be new, it must also be *not obvious*.

A negative is, normally, hard to prove. Fortunately, the inventor/applicant is not required to submit evidence that his or her invention is non-obvious. Rather, it is up to the patent examiner to demonstrate¹ that the invention is obvious. The applicant then has the opportunity to rebut the examiner.

Determining obviousness, however, clearly involves some level of subjective reasoning. To the layman “obvious” means: easy to see or understand, plain or evident. It is tempting to believe, therefore, that obviousness is not a quality that can be nailed down with a specific list of traits and that non-obvious inventions will be clear and apparent once they are revealed in the specification of a patent application. It doesn’t work that way.

Obviousness as Determined by the Patent Office

In patent prosecution, objective standards and processes, prompted by court decisions², have been developed by the USPTO as guidelines for use by examiners in evaluating whether or not a proposed invention is obvious. Even though an inventor does not need to prove non-obviousness, being aware of the tests applied by the examiner can be useful to an inventor in testing a gut feel that an invention is not obvious.

In patent prosecution, non-obvious means that the subject matter on which a patent is sought is *different enough* from what has been used or described before (i.e. the prior art) that the differences in the subject matter as a whole would not have been obvious to a person having ordinary skill in the area of technology related to the invention. The examiner makes a decision on obviousness based on an examination of the specification in the patent application, other evidence submitted by the applicant, and on the prior art search the examiner will conduct in the course of his or her examination.

The issue of obviousness in the subject matter of an invention, then, hinges on what someone of ordinary skill in the art would consider obvious when looking at the prior art. And the key is the nature of the differences between the claimed subject matter as a whole and the subject matter of the prior art. It is also important to note that the issue of obviousness must be resolved based on

¹ The standard of “proof” in the patent office is “preponderance of evidence”. Thus obviousness is considered proved if it is more likely than not. It doesn’t have to be proved “beyond all reasonable doubt”, or even to the level of being “clear and convincing”.

² e.g. the recent Supreme Court decision in *KSR International Co. v. Teleflex Inc.* (550 U.S. __, 82 USPQ2d 1385 (2007))

what was known *at the time the invention was made* and without undue influence from the disclosure made by the inventor in the specification (i.e. without hindsight).

The proof of obviousness in the patent office is based on a *preponderance of all of the evidence*. A preponderance of the evidence only requires that the evidence offered in support of obviousness is more persuasive than the evidence offered in opposition. All of the evidence must be considered. On rebuttal of a prima facie case of obviousness made by an examiner, the inventor must consider the evidence used by the examiner. Likewise, the examiner must evaluate *facts* established by the rebuttal evidence against the *facts* on which the conclusion of obviousness was reached – not the conclusion itself.

Since the issue of obviousness is so crucial to the granting of a patent, an inventor would be well advised to give obviousness close and careful attention when preparing a patent application filing. Inventions are solutions to problems. But not every solution to a problem is an invention.

Statutory Requirement Regarding Non-obviousness

Problems can be old, long outstanding problems such that no solution, or no truly effective solution, has yet been found. Old problems may also have a history of the failure of others to solve them which lends credence to a belief that any useful solution (that is, one that actually works) is non-obvious. Solve one of these problems, effectively, and more likely than not you will have made an invention.

New problems however, first recognized as problems because changing society and emerging technologies lead us to them, have not stood the test of time with respect to exposure to obvious solutions. These new problems which only arise in the context of a changing environment are more likely to be solved by the application or easy adaptation of known processes in the same or related fields of art. Patents will not be granted to the first person to solve a problem unless the solution is truly inventive.

Non-obviousness became a statutory requirement for patentability with the Patent Act of 1952 when 35 U.S.C. 103 was added. Prior to that time the only statutory requirements for patentability were novelty and utility. However, even before the Patent Act of 1952 was enacted the courts had imposed a non-obviousness requirement. Since then, the courts have helped to frame the tests for obviousness. In view of the recent Supreme Court decision in KSR and an earlier 1966 decision in Graham v. John Deere, the USPTO has recently (October 2007) published [examination guidelines](#) for determining obviousness under 35 U.S.C. 103. The USPTO also has more detailed [training examples](#) regarding obviousness which may be of interest.

Guidelines Used to Determine Obviousness

The following summary of these guidelines will, we hope, highlight the objective standards the USPTO applies in determining obviousness.

The process to be used by patent examiners in evaluating obviousness is stated as follows:

- A. Determine the scope and content of the prior art;
- B. Ascertain the differences between the claimed invention and the prior art; and

C. Resolve the level of ordinary skill in the pertinent art at the time of the invention.

It is also suggested that other objective evidence relevant to the question of obviousness such as evidence of commercial success, long felt but unsolved needs, failure of others to solve the problem, and unexpected results might also shed light on the origin of the subject matter on which a patent is sought and may be relevant to reaching a decision on obviousness. It is recognized that this determination is difficult and that uniformity of thought in any factual context is unlikely.

In moving forward with this process, let us assume that the examiner has developed a thorough understanding of the invention disclosed and its claims even though this might not always be the case. This understanding is necessary so that the examiner can address step 1 of the process and know what and where to search in the prior art. With prior art to compare to and an understanding of both the claimed invention and the prior art, the examiner will be able to ascertain the differences between the two in completing step 2. As noted previously, the existence of differences may indicate novelty, or newness, but differences alone are not sufficient to indicate a claimed invention is non-obvious.

The final question to be addressed is whether or not the identified differences would be obvious to a person of ordinary skill in the art at the time the invention was made. Since there is a significant lag between the time an application is filed and the time it is reviewed by an examiner, there is a look back period. What a person of ordinary skill might have learned as a result of advances in technology subsequent to the date of the claimed invention is not relevant.

In considering what might be obvious to this hypothetical person of ordinary skill, the following might be considered:

- The types of problems encountered in the art
- The prior art solutions to those problems
- The rapidity of innovation in the art
- The level of sophistication in the technology
- The educational level of workers in the field of the art.

In addition, this hypothetical person of ordinary skill can also be imbued with the ability to draw inferences associated with ordinary creativity.

Rationales Used to Articulate Obviousness

The above are considered factual inquiries. Essentially, these factual inquiries identify the differences between the prior art and the subject matter on which a patent is sought and the level of ordinary skill in the art. The next step, given these facts, is for the examiner to analyze whether or not the claimed invention would have been obvious to one of ordinary skill in the art. The fact that there are differences between the prior art and the claimed invention is not sufficient. For patentability, the differences must be so great that bridging the gap would not have been obvious. The examiner cannot just reach a conclusion that the claimed invention is obvious. The examiner must articulate reasons drawn from the factual inquiry which explain why the claimed invention would have been obvious.

Several rationales have been enunciated by the USPTO which can be applied by the examiner to support a conclusion of obviousness:

A. Combining prior art elements according to known methods to yield predictable results.

If prior art contains all of the claimed elements and one of ordinary skill could have combined them using known methods to yield only predictable results, then this rationale can be used to indicate obviousness. It may be helpful in applying this rationale for the examiner to identify a reason why someone of ordinary skill might choose to combine the elements in order to produce the claimed new invention.

B. Simple substitution of one known element for another to obtain predictable results.

If prior art contains a process similar to the claimed invention which can be made into the claimed invention by the substitution of one or more known elements or steps and one of ordinary skill could have made the substitution with predictable results, then this rationale can be used to indicate obviousness.

C. Use of known technique to improve similar devices (methods or products) in the same way.

If prior art contains a “teaching” or example of a similar or comparable process that had been improved or enhanced in the same way as the process on which a patent is being sought and one of ordinary skill could have applied the known improvement with predictable results, then this rationale can be used to indicate obviousness.

The fact that the known method used in a patent claim had been used in the prior art to improve other similar processes would make this improvement technique part of the ordinary capabilities of one skilled in the art.

D. Applying a known technique to a known device (method or product) ready for improvement to yield predictable results.

If the prior art contains a base process for which the claimed invention can be seen as an improvement and a known technique that is applicable to the process and one of ordinary skill would have been capable of applying this known technique to the prior art with predictable results, then this rationale can be used to indicate obviousness.

The significant factor here is that the known technique used to improve the process on which a patent was sought was already one of the ordinary capabilities of a person of ordinary skill in the art at the time of patent application. Therefore, applying such technique to improve a known process ready for improvement would have produced predictable results and would have been obvious.

E. “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success.

If a problem (created, for example, by market need or design considerations) can be solved by the testing of a finite number of identified, predictable potential solutions to the recognized need or problem and one of ordinary skill in the art could have pursued these known potential solutions with a reasonable expectation of success, then this rationale can be used to indicate obviousness.

The essential element in this rationale is that when faced with the challenge of the problem one of ordinary skill could be expected, through acquired skill and common sense, to apply known options to find a solution. If such an approach leads to the anticipated success, it is more likely the result of ordinary skill than innovation.

F. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art.

A requirement of this rationale is that prior art, either in the same or a different field as the claimed invention, includes a process similar or analogous to the claimed invention which provides an example of a solution. If the differences between the claimed invention and such prior art example encompass known prior art variation or principles which would have been apparent to one of ordinary skill in view of identified design incentives or other market forces, then this rationale can be used to indicate obviousness. It is essential that the application of such variation or principles exhibited in the prior art to the invention being claimed produce predictable results.

G. Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

If the basic elements of the claimed invention exist in the prior art and there was some teaching, suggestion, or motivation in the prior art that would have led someone of ordinary skill to combine or modify the references into the elements of the claimed invention with a reasonable expectation of success, then this rationale can be used to indicate obviousness.

The teaching, suggestion, or motivation found in the prior art need not be explicit – it may be implicit in the knowledge of one of ordinary skill in the art or be made evident by the nature of the problem to be solved. An implicit suggestion or motivation may also be provided by the universal desire to improve or enhance commercial processes to make them cheaper, faster, or more efficient, for example. In this context, if an ordinary practitioner in the art has the knowledge and skills necessary to combine or modify prior art references into a solution, then this rationale can be used to indicate obviousness.

Rebuttal

As noted, an applicant has no obligation to prove non-obviousness. However, once an examiner has made a prima facie case of obviousness and articulated his reasons for reaching this conclusion, the burden then falls on the applicant to show that the examiner has erred or to provide additional evidence which, taken together with all other evidence and cited prior art,

would support a conclusion that the claims are non-obvious. The applicant's response must distinctly and specifically articulate the reasons why it is believed the examiner is wrong and how the additional evidence, if any, can be used to disprove the examiner's conclusion that some or all of the claims are obvious.

Often a conclusion of obviousness can be rebutted by specifically addressing one or more of the conclusions reached by the examiner relative to the capabilities of a person of ordinary skill in the art. It may be possible to find prior art that teaches away from the claimed invention or common knowledge and experience of a person of ordinary skill may teach away from the claimed invention. It might also be argued that the claimed invention produces surprising, that is, not predictable results, when prior art elements are combined or modified.

Since obviousness is based on an examiner's presumption of what a person of ordinary skill would see in the links between prior art and the invention claimed, declarations by experts in the field of the invention may be useful in a rebuttal argument. This may be especially true with respect to inventions in insurance and the broader financial services markets since most patent office examiners do not have a good grounding, experience, or training in these subject areas.

A Proactive Approach

While an applicant has no obligation to prove or demonstrate non-obviousness in a patent application, it may make the application/examination process more efficient if the applicant, proactively, lays the groundwork for non-obviousness in the specification section of the application. A search for obviousness is, after all, a principal component of an examiner's review.

The applicant has an obligation to provide all prior art relating to the claimed invention of which the applicant is aware. However, the applicant may choose to go further than this and search in advance for prior art the examiner is likely to find during the examination process and which the applicant may not be familiar with. This, together with the fact that the applicant is likely to be, at least, a person of ordinary skill in the art of the claimed invention, gives the applicant a good head start.

A background section of the specification can be crafted to document the motivation for the invention and how the other known processes fail to solve the problem the invention is solving. This will serve to highlight the differences between the prior art and the claimed invention. Explaining how the process came to be invented in terms of the prior art influences may also serve to highlight an "inventive step". Anticipating and effectively addressing these issues in advance in the specification can head off an examiner's prima facie conclusion of obviousness based on this prior art.

Documenting any experiments done to arrive at the claimed inventive solution, indicating false trails or leads or misdirection in the prior art, may also serve to highlight the fact that the claimed invention is not obvious and that it would not have been discovered save for such experimentation the results of which were not predictable.